

<b><u>Science Benchmarks</u></b>	
	Grade Four
	The student will:
	<b>Standard 1: EARTH &amp; SPACE SCIENCE</b> Demonstrate an understanding of the structure and systems of Earth and other bodies in the universe and their interactions.
4-1a.	Demonstrate that the Earth is one of several planets that orbits the Sun and that the Moon orbits around the Earth.
4-1b.	Recognize that over time planets change their position in the sky.
4-1c.	Compare the surface features of our moon and the nine planets that orbit the Sun.
4-1d.	State that the Sun's gravitational pull keeps the Earth and other planets in their orbit.
	<b>Standard 2: LIFE SCIENCE</b> Understand the characteristics and structures of living things, the processes of life, and how living things interact with each other and their environment.
4-2a.	Examine plants' and animals' external features that help them thrive and adapt in different environments.
4-2b.	Differentiate between living things that can be sorted into groups using various properties to decide which things belong to which group.
4-2c.	Explain that animals and plants have a great variety of body parts and internal structures that contribute to their being able to make or find food and reproduce.
4-2d.	Examine that when an environment changes some plants and animals survive and reproduce and others die or move to new locations.
4-2e.	Discuss that some source of "energy" is needed for organisms to live and grow.
4-2f.	Explain that almost all food energy ultimately comes from the Sun as plants convert light into stored chemical energy; that energy can change from one form to another in living things.
4-2g.	List the six main nutrients that provide for energy, growth, and repair of your body cells.
4-2h.	Know that many characteristics of an organism are inherited from the parents of the organism but other characteristics result from an individual's interactions with the environment.
	<b>Standard 3: PHYSICAL SCIENCE</b> Demonstrate an understanding of the physical and chemical properties of matter, the forms and properties of energy, and how matter and energy are interrelated.
4-3a.	Determine that things have properties (e.g., magnetism, conductivity) that can be used to tell them apart and to find out which of them are alike.
4-3b.	Demonstrate that electrical circuits require a complete loop through which the electrical current can pass.
4-3c.	Illustrate that electrical circuits require a complete loop through which the electrical current can pass.

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4-3d.	Explore that different kinds of materials respond differently to electric forces; in some materials, such as metals, electrons flow easily, whereas in insulating materials, such as glass, they can hardly flow at all.
4-3e.	Demonstrate that light can be reflected by a mirror, refracted by a lens, or absorbed by the object.
4-3f.	Describe how colored objects reflect or absorb colors of the visible spectrum.
	<b>Standard 4: SOCIETY &amp; TECHNOLOGY Demonstrate an understanding of scientific knowledge and technological design in society.</b>
4-4a.	Know that people have always had questions about their world; science is one way of answering questions and explaining the natural world.
4-4b.	Know that scientific investigations involve asking and answering a question and comparing the answer to what scientists already know about the world.
4-4c.	Identify the different kinds of investigations scientists use based on the questions they are trying to answer.
4-4d.	Plan and conduct a simple investigation (e.g., systematic observations and simple experiments to answer questions).
4-4e.	Know that scientists develop explanations using observations (evidence) and what they already know about the world (scientific knowledge).
4-4f.	Determine that to make better observations and measurements, scientists use simple equipment and tools to gather specific data and extend the senses.
4-4g.	Know that people have always had problems and invented tools and techniques (ways of doing something) to solve problems.
4-4h.	Understand that in science it is helpful to work with a team and share findings with others.
4-4i.	Determine that the same scientific investigation often gives slightly different results when it is carried out by different persons or at different times or places.
4-4j.	Recognize that if the results of repeated experiments are very different, something must be wrong with the design of the investigation.
4-4k.	Explain why scientists often repeat an experiment many times before accepting a consistent result as true.
4-4l.	Explain that scientists formulate and test their explanations of nature using a variety of models including the scientific method.